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EDCI 3140

Cynthia Ybos
University of New Orleans

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EDCI 3140: Teaching Elementary School Mathematics

Fall 2015

Class Meeting: Tuesday/Thursday 9:30-10:45

Instructor: Dr. Cynthia Ybos Email: clybos@uno.edu

Office Hours: room 342 Tuesday/Thursday 8:30-9:15; other times by appointment

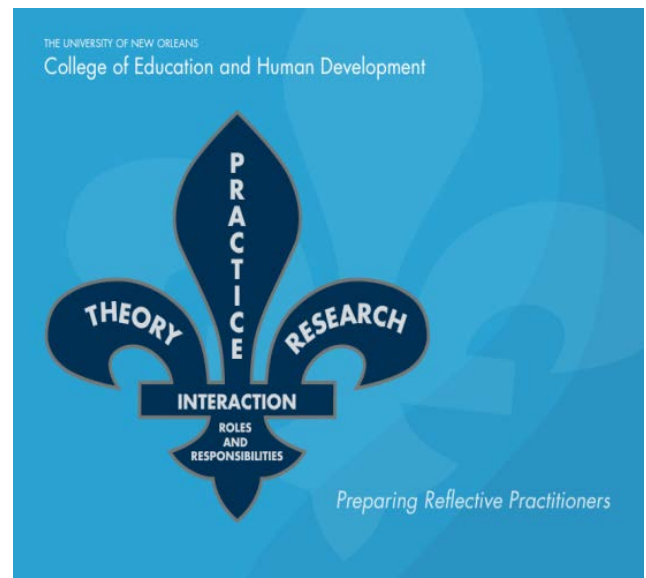
Prerequisite: Admission to the Teacher Education Program.

Course Description: In this course we will work on mathematical topics, as well as focus on the teaching of elementary school mathematics for grades K-8. This course is designed to facilitate disciplined reflective inquiry into the education process through the interaction of theory and practice. Throughout the course you will be encouraged to reflect on your learning as a tool for thinking about how learning happens. ***A primary goal is to enrich the content knowledge of the candidates so that they are proficient as K-8 educators who can serve as leaders of best practices for mathematics at their school.***

College Mission: The mission of the College of Education and Human Development is to improve teaching and leadership, advance lifelong learning, and promote health and wellness through enhanced community partnerships. The unit's purpose is to prepare reflective practitioners who develop, implement, and evaluate effective education and human development programs/services through a program of study grounded in the interaction of theory, practice, and research.

Conceptual Framework:

Our conceptual framework, the theory-practice-research interaction model, permeates the programs preparing candidates for professional roles in school settings. As candidates progress through their professional studies, they are introduced to formal theories and concepts that are validated by research, which along with their personally held beliefs and assumptions, inform their professional practice. The roles and responsibilities set out the broad domains for developing competence of teacher candidates viewed through the lens of the theory-practice-research interaction model. As candidates engage in various clinical and field experiences included in their program of study, observation and study of professional practices inform and refine the educational theories and concepts they construct. Our goal is to have our candidates internalize the theory-practice-research interaction model, as they develop into reflective practitioners constantly reassessing the educational theories, beliefs, and assumptions they embrace.



This course addresses UNO Teacher Roles and Louisiana State COMPASS Standards. For teacher preparation, the roles and responsibilities follow:

I. EFFECTIVE TEACHERS MANAGE CLASSROOM CONTEXTS AND ENVIRONMENTS

- A. They establish a culture for learning by:
 - 1. Managing classroom procedures (COMPASS 2c)
 - 2. Managing student behavior
 - 3. Organizing physical space
 - 4. Organizing classrooms to integrate technology
 - 5. Maintaining accurate records using available technology
- B. They create an environment of respect and rapport by:
 - 1. Using cultural contexts in the classroom

2. Demonstrating knowledge of diversity among students
3. Presenting rationales for change to meet students needs

II. EFFECTIVE TEACHERS *DESIGN CURRICULUM AND INSTRUCTION*

- A. They understand and use curriculum and instruction by:
 1. Knowing content
 2. Knowing pedagogy
 3. Setting instructional outcomes (COMPASS 1c)
 4. Designing coherent instruction
 5. Designing student assessments
 6. Incorporating knowledge of diversity in the classroom
 7. Planning for the use of technologies in curriculum and instruction
 8. Demonstrating knowledge of resources, including technologies
 9. Planning for the use of collaborative group practices in the classroom
- B. They communicate effectively by:
 1. Incorporating effective written communication in the classroom
 2. Incorporating effective oral communication in the classroom

III. EFFECTIVE TEACHERS *DELIVER INSTRUCTION AND ASSESS LEARNING*

- A. They engage students in active learning (COMPASS 3c) by:
 1. Interacting effectively with students
 2. Demonstrating flexibility and responsiveness
 3. Integrating technology and other resources
- B. They integrate disciplines into instruction by:
 1. Applying connections to multiple disciplines
 2. Demonstrating connections to real life
- C. They use assessment in instruction by:
 1. Incorporating performance tasks in the classroom
 2. Using questioning and discussion techniques (COMPASS 3b)
 3. Using pre-assessment, formative assessment, and summative assessment appropriately (COMPASS 3d)
- D. They embed diversity in decision-making by:
 1. Selecting resources
 2. Delivering instruction
 3. Assessing learning

IV. EFFECTIVE TEACHERS *PARTICIPATE IN PROFESSIONAL RESPONSIBILITIES*

- A. They advocate for children, in terms of services and supports by:
 1. Communicating with families
 2. Demonstrating knowledge of resources in school and the community
- B. They collaborate to improve professional practice by:
 1. Engaging in a professional community
 2. Participating in professional development
 3. Collaborating with teachers and mentors
 4. Developing goals for social justice
 5. Using research-based practices that include current available technology
- C. They reflect on teaching and learning by:
 1. Focusing on cultural contexts and social justice
 2. Collecting and analyzing data to improve practice

ACEI STANDARDS

1. *Development, learning and Motivation:* Candidates know, understand, and use the major concepts, principles, theories, and research related to development of children and young adolescents to construct learning opportunities that support individual students' development, acquisition of knowledge, and motivation.
2. *Curriculum 2.3:* Candidates know, understand, and use the major concepts and procedures that define number and operations, algebra, geometry, measurement, and data analysis and probability. In doing so they consistently engage problem solving, reasoning and proof, communication, connections, and representation;

3. **Instruction**
 - 3.1 Integrating and applying knowledge for instruction**—Candidates plan and implement instruction based on knowledge of students, learning theory, connections across the curriculum, curricular goals, and community;
 - 3.2 Adaptation to diverse students**—Candidates understand how elementary students differ in their development and approaches to learning, and create instructional opportunities that are adapted to diverse students;
 - 3.3 Development of critical thinking and problem solving**—Candidates understand and use a variety of teaching strategies that encourage elementary students’ development of critical thinking and problem solving;
 - 3.4 Active engagement in learning**—Candidates use their knowledge and understanding of individual and group motivation and behavior among students at the K-6 level to foster active engagement in learning, self-motivation, and positive social interaction and to create supportive learning environments;
 - 3.5 Communication to foster collaboration**—Candidates use their knowledge and understanding of effective verbal, nonverbal, and media communication techniques to foster active inquiry, collaboration, and supportive interaction in the elementary classroom.
4. **Assessment:** Candidates know, understand, and use formal and informal assessment strategies to plan, evaluate and strengthen instruction that will promote continuous intellectual, social, emotional, and physical development of each elementary student.
5. **Professionalism:**
 - 5.1 Professional growth, reflection, and evaluation**—Candidates are aware of and reflect on their practice in light of research on teaching, professional ethics, and resources available for professional learning; they continually evaluate the effects of their professional decisions and actions on students, families and other professionals in the learning community and actively seek out opportunities to grow professionally.
 - 5.2 Collaboration with families, colleagues, and community agencies**—Candidates know the importance of establishing and maintaining a positive collaborative relationship with families, school colleagues, and agencies in the larger community to promote the intellectual, social, emotional, physical growth and well-being of children.

NAEYC STANDARDS

1. Promoting Child Development and learning
1.a Knowing and understanding young children’s characteristics and needs
1.b Knowing and understanding the multiple influence on development and learning
1.c Using developmental knowledge to create healthy, respectful, supportive and challenging learning environments
2. Building Family and Community Relationships
2.a Knowing about and understanding family and community characteristics
2.b Supporting and empowering families and communities through respectful, reciprocal relationships
2.c Involving families and communities in their children’s development and learning
3. Observing, Documenting and Assessing to Support Young Children and Families
3. a Understanding the goals, benefits, and uses of assessment
3. b Knowing about and using observations, documentations, and other appropriate assessment tools and approaches
3. c Understanding and practicing responsible assessment
3. d Knowing about assessment partnerships with families and other professionals
4. Teaching and Learning
4. a Knowing, understanding, and using positive relationships and supportive interactions
4. b Knowing, understanding and using effective approaches, strategies, and tools for early education
4.c Knowing and understanding the importance, central concepts, inquiry tools, and structures of content areas or academic disciplines
4.d Using own knowledge and resources to design, implement, and evaluate meaningful challenging curriculum to promote positive outcomes
5. Becoming a Professional
5.a Identifying and involving oneself with the early childhood field
5.b Knowing about and upholding ethical standards and other professional guidelines
5.c Engaging in continuous learning to inform practice
5.d Integrating knowledgeable, reflective, and critical perspectives on early education
5.e Engaging in informed advocacy for children and profession

Student Learning Outcomes:

STUDENTS WILL BE ABLE TO:	Unit Standards	State Standards	ACEI	NAEYC
1. Demonstrate strategies for teaching and enhancing acquisition of concepts and computational skills using a variety of materials and methods.	IIA, IIB, IIIA,	1C, 2C, 3B, 3C	1, 2.3, 3.1- 3.5	1, 4(a-d), 5
2. Develop and apply alternative assessments to analyze a child's understanding of a topic.	IB, IIA, IIIA, IIIC, IIID, IVD	1C, 3B, 3D	2.3 3.1 - 3.5 4, 5.2, 5.3	1, 3, 4(a-d), 5
3. Develop and teach reform-based lesson plans to children based on state teaching competencies and Common Core State Standards.	IIA, IIB, IIID, IVC, IVD	1C, 2C, 3B, 3C, 3D	1, 2.3 3.1 - 3.5 4, 5.2, 5.3	1, 3, 4(a-d), 5
4. Identify and explore sophisticated strategies adaptable to diverse populations of students.	IB, IIA, IIIA, IIIB, IIIC, IVD	1C, 2C, 3B, 3C, 3D	1, 2.3 3.2	1, 4(b-d), 5
5. Develop understandings of classroom management and motivational techniques for multicultural classroom settings through field experiences in the elementary schools.	IA, IB, IIIA, IVA, IVB, IVD	1C, 2C, 3B, 3C, 3D	1, 2.3 3.1 - 3.5 5.3	1, 4(a-d), 5
6. Discuss the scope and sequence for teaching K-8 mathematics as reflected in the Common Core and NCTM Standards.	IIA, IIB, IIIB, IIID	1C, 3C	2.3 5.2, 5.3	1, 4(b-d), 5

Texts and Materials

Elementary and Middle School Mathematics—Van de Walle 9th or 8th edition
 One 3-ringed binder
 Common Core State Standards (www.corestandards.org)
 NCTM Focal Points (www.nctm.org)

This course includes preparation for a candidate assessment that is a requirement for program progression. Students planning to student teach must complete a program-specific assessment by the end of this semester and receive an acceptable score on the assessment. Additionally, you are required to document all work conducted in schools as part of the field experience component of this course. All field experience information should be uploaded to LiveText. Uploading this information is the responsibility of the student and should occur throughout the semester with all required information entered one week after the last field experience of the semester.

DESCRIPTION OF ASSIGNMENTS

These are general overviews of the assignments you will complete during the semester. More detailed information is posted on Moodle. ***These assignments are subject to change as unforeseen situations arise during the semester. Any changes in the actual assignments or due dates will be posted on Moodle, sent to you by email, and announced in class.*** Please check your email and Moodle on a regular basis so that you will be aware of these changes as soon as they are posted. All revised assignments will have a revised date written in the top right corner of the assignment. ***Please be sure you are using the latest version of the directions when completing the assignments.***

- 1. Attendance and in-class assignments:** You are expected to arrive in class on-time and prepared to engage in the day's activities. If you are more than 5 minutes late, you are considered tardy and points will be deducted from your grade. Any written work completed and handed in during class count as part of your attendance and participation grade for that day. If you are absent, you may not make up the in-class assignments for that day.

You should get class notes and other important information from your colleagues. If you do not understand concepts or announcements presented in your absence, you should make an appointment with me to discuss it outside of class. I will not take class time to help you catch up. You should save each of the in-class assignments that you complete to include in your portfolio.

2. **Homework assignments (6 @ 20 points each; 120 points total):** You will have read assigned parts of the text and answer questions. You will also have to use the internet to complete some parts of the assignment. Due dates are given on the class calendar and posted on moodle. All homework assignments should be put in your portfolio.
3. **Class (Journal) reflections (2 @ 10npoints each; 20 points total):** You will complete and turn in two class journals on designated dates. I will comment on these and return them to you. You will include these in your portfolio.
4. **Peer teaching (2 @ 15 points each; 30 points total):** You will plan, conduct and reflect on two lessons you teach to your peers during class time. The purpose of this peer teaching is to help you become more comfortable in guiding learning using manipulatives and questioning techniques. Check course calendar for dates and moodle for more information on doing this assignment.
5. **Lesson Analysis (3 @ 20 points each; 60 points total):** As a class teacher, you will not often create lessons on your own. You will find prepared lessons and adapt them for your use in a classroom. Additionally after a lesson is taught, the most effective teachers pause and reflect on what changes should be made to the lesson to make it better. In order to practice and understand this process, you will select a prepared lesson that I have posted on Moodle to complete the analysis assignments. Each analysis will be put in your portfolio.
6. **Midterm and final exams(40 points each):** Each exam will be performance based and completed in class.
7. **Field experience (140 points total):** You engage in two types of field activities during this class. The first set of activities are self-selected and designed to help you learn effective assessment techniques and how to identify rich mathematics environments and instruction. The second set will consist of class visits which I will arrange to be conducted during class time. More information on both types of activities are posted on Moodle.
8. **Portfolio (80 Points):** As you proceed through your teacher education program at UNO, you will be collecting work samples to demonstrate your developing knowledge, skills, and dispositions as a teacher. Teacher Education faculty will evaluate these work examples as you move from course work into student teaching and again when you complete student teaching, prior to graduation and teacher certification. This course is designed to help you prepare for that evaluation. You will complete a class portfolio in order to demonstrate that you have mastered the course and College of Education program objectives. More specific information for this assignment is posted on Moodle.

All reading and written assignments as well as class activities for this course are specifically designed and chosen to further your understanding of mathematics and how to teach. I do not believe in giving busy work and everything you do for this class is an important step in learning how to teach mathematics to elementary school students. I spend a great deal of time preparing and reflecting on each lesson and assignment. I carefully read each assignment you complete and hand in. What you learn in this class is directly proportional to how much effort you put into the course. If you come to class late, miss classes, or turn in someone else's work, you will not gain the skills you need to be an effective teacher.

Grading Scale: A: 100 – 93%, with A - B on Oral B: 92 – 87%, min C on Oral C: 86 – 75%, min C on Oral

COURSE AND UNIVERSITY POLICIES

GRADING POLICIES

1. You are expected to attend all classes whether they are held on campus or at designated schools. You are an adult and I expect you to be judicious about what constitutes an emergency situation requiring you to miss class. Because of that, I do not have any policies regarding what constitutes an excused absence or an unexcused absence. An absence is an absence regardless of why you miss class. My policy, therefore, is that if you are **absent for more than 3 classes**, you will receive **one letter grade less** than the total number of points you earn

for the course and an additional drop of one letter grade for each absence after the first four. After five absences, I recommend that you drop the course.

2. **Attendance includes staying for the entire class period.** Arriving late or leaving early will be counted as an absence. I try to respect your time by starting class promptly, using class time effectively, and finishing class activities on time. In order to gain the maximum you can from this course, you must also use this class time effectively.
3. **I use the entire class time to engage in productive activities.** Being on time means that you are seated and ready to begin work at 9:30, not walking in the door at 9:30. I will start on time regardless of whether everyone has arrived or not. Late arrivals often disrupt class. Additionally, you will complete written activities during class. If you are late or absent, you may not make up these assignments. This will result in a lower grade for the course. Therefore, if you are **tardy for more than 4 classes**, you will receive **one letter grade less** than the total number of points you earn for the course and an additional drop of one letter grade for every two tardies after the first four.
4. It is expected that **you submit all of the required course assignments** in order to demonstrate an understanding of teaching of mathematics to children. All assignments are expected on the designated due date and are to be completed in a professional, appropriate manner. Specific standards to be followed for all written work are included in this syllabus. You are responsible for knowing and using those standards. Every assignment is important, therefore I do accept assignments late. Failure to hand assignments in on time, complete assignments, or follow standards for written work will result in a lower grade for the course. If you hand in more than 2 assignments late, you will receive one letter grade lower than the points you have earned for this course. Your letter grade for the course will be lower one letter grade for each additional late assignment.
5. It is also expected that **all work you hand in will be your own work** and done specifically for this course only. Do not use articles or work from another course. Unless stated otherwise, all assignments are individual projects. I do not mind if you discuss your work with others in the class but you are to complete each assignment individually. Any indication that you are handing in someone else's work or work from another class will result in immediate failure in this class.
6. **Handing work in early:** If you hand in an assignment at least five days prior to the due date, I will quickly review it and if there are major problems with it, I will let you know and you can rework it with no grade penalty. I will let you know your grade as soon as I grade the assignment and return it when I return everyone else's assignments.
7. **Students are expected to demonstrate both oral and written competency.** All written work should be grammatically correct, free of spelling errors, and relatively free of typos. That is, every assignment should read like it has been thoroughly proof read.
8. A grade on an assignment is neither a judgment of you as a person or of the amount of time or effort you spent on these items, but rather of the quality of your work. Note also that **All** of the course requirements must be completed, as well as a C or better on the oral final exam, in order to attain a passing grade for this course.

Grades will be assigned according to the following point criteria: A: 93 – 100% with an A - B on final exam; B: 87 – 92%, with a minimum grade of C on final exam; C: 75 – 86%, with a minimum grade of C on final exam.

STANDARDS FOR WRITTEN WORK

THE CONTENT

1. Be concise, but thorough. I'm looking for specifics and not "glittering generalities."
2. Tell me more than a 6th grader could tell me. I'm also looking for more than the "company line." We all know learning should be fun and relevant. You need to go beyond that and demonstrate that you are a teacher with a true understanding of how children learn and use mathematics.
3. All stated lengths are guidelines. I do not grade with a ruler, but look carefully at the content. Do not add unnecessary information to achieve a certain length. Like Goldilocks, I don't want them too short or too long, but just right.

THE MECHANICS

1. All work should be typed (unless otherwise noted in the directions). You should use black ink, 1" margins, 10-12 font, and 1.5 or double spacing. All work should be neat in appearance.

2. Use the following heading on the first page of each assignment:

Name	EDCI _____ (course number)
Title of assignment	Due date
3. You should have your name on EACH page of the assignment and all pages should be numbered. Assignments with multiple pages should be stapled together.
4. For each assignment I will provide a rubric or checklist. Please copy that assessment and include it with your assignment. Failure to include the rubric or checklist with your assignment will result in failing grade.
5. Do not use etc. or so on anywhere, anytime, in any assignment. It's imprecise and not professional.
6. Use correct spelling and grammar on all assignments.
7. I prefer hard copies of assignments to grade. Email assignments only after you have discussed it with me or if you are absent.
8. I always gladly accept assignments early. If you hand them in *at least five days early*, I will quickly review it and return it to you if it has major problems with no grade penalty. If the assignment appears adequate, I will keep it and return it to you when I return everyone else's assignment.

What makes a high quality answer different from a low quality answer?

High quality answers

1. Use correct professional terminology and concepts,
2. Have specific descriptions of what the student knows and can do as well as the areas of concern,
3. Demonstrate complete and correct understanding of the mathematics being taught,
4. Demonstrate and explain why the concepts and skills are important and relevant to the students lives beyond any future math courses the student may take,
5. Provide more than just explanation to further student understanding of the concepts and skills being taught,
6. Put the emphasis on the student's thoughts, actions and understanding and not the teacher,
7. Are thorough but concise and thoughts are highly organized and explained in a logical way, and
8. Discuss the relation between what is observed and the assigned readings, class discussions, and personal experience.

CLASS BEHAVIOR POLICIES

The philosophy of this course is that people of all ages and learning styles learn best in an environment in which they are free to explore topics and come to their own understanding. This environment includes working cooperatively with others from diverse backgrounds in heterogeneous settings and is consistent with the College of Education and Human Development's mission to prepare professionals who practice in culturally diverse settings. In order to allow for collaborative, professional dialogue in class, the following policies will be used for class meetings and assignments:

1. ***Please be prepared for class.*** Being prepared means that you have completed the homework assignments prior to class and understand the ideas presented. I will not "go over" the information in the assignments, but will engage you in supplemental activities designed to reinforce and expand your understanding of the concepts. If you are not somewhat familiar with the concepts presented, it will be more difficult to complete the activities.
2. ***Turn off or silence cell phones during class.*** If you must take a phone call, please leave the class quietly to conduct your conversation. Please return quietly when you have finished the call.
3. ***If something happens and I must cancel class,*** I will send everyone an email. Please check your UNO email often to access up-to-date information.
4. ***During class time,*** you will be engaged in a great deal of group work. While engaged in group work, please stay focused on the task at hand and refrain from discussion of non-class topics or work you are doing for other classes.
5. ***When the entire class is engaged in discussion of a topic or I am explaining important ideas,*** please refrain from excessive movement, noise or other distracting behavior. Also, please respect comments made by

colleagues. You may disagree with certain points of view or your experience may be different, but express your concerns and questions with respect and professionalism. Be prepared to assist your colleagues with understanding topics or procedures we may explore during class.

6. ***If you think you will have any problems meeting any of the requirements*** for this course, email me to set up a meeting. I suggest you do this early in the semester. My options for assisting you are limited at the end of the semester.

UNIVERSITY POLICIES

Statement on Academic Integrity: Academic integrity is fundamental to the process of learning and evaluating academic performance. Academic dishonesty will not be tolerated. Academic dishonesty includes, but is not limited to, the following: cheating, plagiarism, tampering with academic records and examinations, falsifying identity and being an accessory to acts of academic dishonesty. Refer to the UNO Judicial Code for further information. The code is available online at http://www.uno.edu/~stlf/policy%20Manual/judicial_code_pt2.htm

It is University Policy to provide, on a flexible and individualized basis, reasonable accommodations to students who have disabilities that may affect their ability to participate in course activities or to meet course requirements. The Office of Disability Services (ODS) in conjunction with the Office of Academic Affairs maintain a policy regarding the accommodations of students with disabilities. Students with disabilities should contact the Office of Disability Services as well as their instructors to discuss their individual needs for accommodations. For more information go to <http://www.ods.uno.edu>.